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SECOND ACCOUNT OF NEW VERTEBRATA FROM THE BRIDGER EOCENE.

BY EDWARD D. COPE.

(*Read before the American Philosophical Society, August 15, 1872.*)

HELOTHERIUM PROCYONINUM. Cope. Spec. nov.

This species is distinguished from those already known as pertaining to this genus, by its small size, as it did not much exceed the raccoon in dimensions. The size of a right superior molar is as follows :

	M.
Length.....	.0007
Width posterior0085
“ anterior006

The crown presents four tubercles, of which the inner are flat on the posterior, the outer flat on the external side. The posterior external has a small posterior supplementary lobe, and a low tubercle intervenes between the two posterior. An anterior and a posterior cingulum. Enamel smooth.

STYPOLOPHUS PUNGENS. Cope.

Gen. et spec. nov.

This genus is supposed to embrace a small species of carnivorous animal found by the writer in the Eocene formation of the Bridger Group. It is represented by the posterior portion of the left mandibular ramus, which contains the last two molars.

The generic characters are seen in the composition of these molars, which have but two roots, and a posterior table, as is seen in tubercular molars of some *mustelidæ*. The anterior two-thirds of the crown is composed of conic cusps. On the last molars these are in two series, two lower, of the inner, and one more elevated, of the outer, opposite the interval between the outer. Its outer face is regularly convex, but its posterior forms, with that of the outer series, a single flat vertical plane, which forms a sharp angle with the inner and outer faces of the cusps.

The structure is, in general, somewhat like that of *Mesonyx*, Cope, but the lack of cutting edge on the posterior lobe, and the two rows of tubercles separates it at once. Dr. Leidy describes *Sinopa* as having a sectorial tooth, as in ordinary *Carnivora*, with an interior cusp, hence it is not probably the present form, although this species was about the size of the *S. rapax*.

The enamel is smooth. The measurements are :

	M.
Depth ramus at last molar.....	.011
Length last molar0072
Width “ posteriorly.....	.0040
Height inner tubercle.....	.0062
“ external “ (anterior).....	.0040

This species was about the size of the gray fox.

From the bluffs of Cottonwood Creek, Wyoming.

PANTOLESTES LONGICAUDUS. Cope.

Gen. et sp. nov.

This form is one of those mixed types which are so abundant in the Bridger Group. Its dental formula is M. 3, P. M. 3; c. 1, incisors unknown. The molars in the only specimen known are so worn as to preclude exact description. They evidently possessed anterior and posterior lobes, separated by a valley, which was most expanded on the inner side. The last molar exhibits a projecting keel posteriorly, which probably supported a small tubercle. The three premolars are all two-rooted and compressed in form. The last presents a crown composed of one large anterior compressed cusp, and a much lower posterior one. There is a slight cingulum in front. The canine is lost, but its alveolus indicates that it was a stout tooth.

So far as the known dental structure goes, this genus resembles nearly the *Notharctus* of Leidy (*Limnotherium* of Marsh), but possesses one premolar tooth less.

The mandibular ramus is quite slender, and there is a large foramen below the first true molar. The masseteric fossa is pronounced.

	M.
Length of dental series to canine.....	0.0280
“ “ three molars.....	.0140
“ “ second “0041
Width “ “ “0030

There were found associated with this jaw some caudal vertebræ of very attenuated form, which point to the possession of a long tail by this animal. One of these displays six short processes arranged round the articular extremity, the neural arch not being completed.

	M.
Length.....	0.016
Proximal diameter.....	.003
Median “0018

PSEUDOTOMUS HIAN. Cope

Gen. et sp. nov.

This form is interesting as the only member of the Edentate order yet discovered in our earlier Tertiary formations. It is represented by a species of which a nearly perfect cranium is in my possession. This is about the size of an agouti, and is of a depressed form. It has a thin molar and zygomatic arch, but no postorbital. There is a large suborbital foramen. The dentition consists of two pairs of long curved teeth, having much the form and position of the cutting teeth of *Rodentia*. These are placed widely apart in the upper jaw, allowing space for the greater portion of the premaxillary between them. The mandibular cutters are less widely separated by a narrow prolongation of the symphysis. The exposure of the tooth is lateral, its direction nearly anterior. It projects anteriorly very little beyond the symphysis, and has a horizontal triturating surface below the level of the latter. Neither pair of cutting teeth

are faced with enamel, but have only smooth cementum without sculpture. There are no molars, but the inferior face of the maxillary bone is rugose as though alveoli had been absorbed. There are traces of very shallow alveoli.

The cast of the brain indicates smooth oval hemispheres which leave the cerebellum and olfactory lobes entirely exposed. The latter are ovoid and expanded laterally.

The cranium is depressed, and has a trace of interparietal crest. The anterior margin of the temporal fossa is marked by a curved angle on each side of the frontal bone. The supra-orbital arch is very short.

This curious animal reminds me of a small *Megalonyx* with flattened cranium. The cutting teeth above are, however, more like those of rodents.

	M.
Length cranium (3.5 in.).....	0.090
Width " (without zygomas).....	.040
" " near end of nasals.....	.027
" upper cutting tooth.....	.007
Depth " " ".....	.0085
Length exposed part lower tooth.....	.009
Width " " " ".....	.006

HADRIANUS OCTONARIA. Cope.

Gen. et sp. nov.

This is a genus of true *Testudinidæ*, designed to include those with double anal scuta, and posterior lobe of the plastron bifurcate. In addition to the species above named, the *H. quadratus* (*Testudo hadriana*, Cope), and probably the species to which belongs a small piece named by Leidy, *T. corsoni*, pertain to the genus.

The *H. octonarius* is distinguished from its congener in many ways. It is of elongate form, strongly contracted at the bridges, but expanded and arched above the limbs. The carapace is quite convex. The plastron has the posterior lobe emarginate rather than bifurcate, as seen in *H. quadratus*. Each projection represents a right-angled triangle rather than a wedge. The anterior lobe presents an elongate lip, which is expanded, and slightly emarginate at the end. The mesosternal bone is heart-shaped, the posterior emargination being wide and deep.

The anterior margin of the carapace is somewhat flared above the limbs. The nuchal scutum is very narrow transversely, but elongate. The carapace descends and is incurved in the middle of the posterior margin.

	M.
Length (below).....	.730
Width at middle.....	.437
" at hind limbs.....	.525

This species differs from the *H. quadratus* in many important points. It is perhaps the largest of our extinct land tortoises, and is founded on a beautifully perfect specimen from the bluffs of Cottonwood Creek.